# Unveiling the silence: Insights into the language profiles of Indonesian students with Autism Spectrum Disorder

**Astria Prameswari [a, *], Suyono [a], Nurhadi [a]**

[a] *State University of Malang, Indonesia*

*Received September 26, 2025; Revised October 7, 2025; Accepted October 20, 2025*

**Abstract.** Indonesian children with Autism Spectrum Disorder (ASD) experience communication disorders in inclusive classrooms. Equitable learning must be provided to all students, including those with ASD. To determine the right intervention, an initial study of the ASD language profile is needed so that teachers and parents can choose the right help for their children. This study aimed to observe and report the actual language competence (pragmatics, phonology, morphology, and syntax) of ASD students in Indonesia. Language competence was observed for six months in 2024. Nine students, aged 12-16 years (male=7, female=2) in three inclusive schools were observed, tested, and their language competency was recorded. The results of the observations were analyzed and classified as a form of language barrier. The student's language profile shows that there are disorders in pragmatics (understanding spoken and written information), phonology (difficulty in pronunciation of the sounds /t/, /s/, and /h/), morphology (using some affixes in words and disorders in variations of word, difficulty in using verbs and nouns at the same time), and syntax (difficulty in constructing complex and contextual sentences). Students also exhibit echolalia, or word repetition, when speaking and writing. Therefore, Indonesian ASD students experience language barriers in the classroom. These show up as unique challenges in their pragmatic, phonological, morphological, and syntactic abilities. With these findings, it is hoped that the language profile of the impaired will be taken into consideration to provide learning interventions according to the character of Indonesian ASD students' language barriers.

**Keywords***:* Autism Spectrum Disorder, Indonesian students, language competence, language disorder, language profile.

**Прамесварі Астрія, Суйоно, Нурхаді. Що приховано за мовчанням: аналіз мовних профілів індонезійських учнів з розладами аутистичного спектра.**

**Анотація.** Індонезійські діти з розладами аутистичного спектра (РАС) страждають від комунікаційних розладів в інклюзивних класах. Усі учні, включаючи тих, хто страждає на РАС, повинні мати рівні можливості для навчання. Щоб визначити

* Corresponding author. Astria Prameswari, 0000-0003-0189-1514, astria.prameswari.2202119@students.um.ac.id

*East European Journal of Psycholinguistics, 12(2), 355–369,* https://doi.org/10.29038/pra

правильний підхід до роботи з такими дітьми, необхідно провести попереднє дослідження мовних особливостей РАС, щоб вчителі та батьки могли обрати правильну допомогу. Мета цього дослідження – дослідити й описати реальний стан мовних навичок (прагматичних, фонологічних, морфологічних, синтаксичних) учнів з РАС в Індонезії. Мовні навички спостерігали протягом 6 місяців у 2024 році. Дев'ять учнів віком 12-16 років (7 хлопців, 2 дівчат) у трьох інклюзивних школах було обстежено, протестовано, а їхні мовні компетенції було зафіксовано. Результати спостережень проаналізовано та класифіковано як форма мовного бар'єру. Мовний профіль учнів показує, що існують порушення в прагматиці (розуміння усної та писемної інформації), порушення у фонології (труднощі у вимові звуків /t/, /s/ та /h/), порушення у морфології (використання деяких афіксів у словах та порушення у варіаціях слів, труднощі у використанні дієслів та іменників одночасно) та порушення у синтаксисі (труднощі у побудові складних та контекстуальних речень). Учні також мали ехолалію, або повторення слів, під час мовлення та письма. Отже, встановлено, що індонезійські учні з РАС стикаються з мовними бар'єрами у вигляді особливих труднощів з прагматичними, фонологічними, морфологічними та синтаксичними навичками. З огляду на ці висновки, автори сподіваються, що мовний профіль осіб з РАС буде взято до уваги, щоб забезпечити навчальні інтервенції відповідно до характеру мовних бар'єрів цієї категорії індонезійських учнів.

***Ключові слова:*** розлад аутичного спектра, індонезійські учні, мовний розлад, мовна компетентність, мовний профіль.

# Introduction

Inclusive education is considered a form of equitable education for all students (Efendi et al., 2022). Studies on inclusive education have been conducted in various countries, including Sweden (Sundqvist et al., 2020), Bulgaria (Lambrev et al., 2020), and Finland (Sirkko & Takala, 2022). The findings revealed that various countries have implemented inclusive education systems.

In Sweden, inclusive education is implemented in accordance with UNESCO regulations to prioritize students' diversity in learning. Sweden provides adaptive learning for the inclusion of students at the primary and secondary school levels. The target students of this inclusion education are 6-16 years old.

In Bulgaria, from 2008-2018, inclusive education was conducted specifically for students in Rome. The purpose of inclusive education is to reduce the educational rights gap for children with disabilities. Bulgaria also provides this education in support of Europe's commitment to equitable education.

In Finland, the inclusive education system is implemented by teachers with inclusive students, carried out in various modes. During the pandemic, digital portals were used. Distance inclusion education is also conducted individually.

In Indonesia, inclusive education has been implemented since 2009 and has been reinforced in the latest regulations (Rustandar & Widinarsih, 2023; Kemdikbud, 2022). However, Indonesia faces various obstacles. For example, educators' limited ability to provide learning, such as preparing proper assessments (Ediyanto & Efendi, 2021), limited funds for learning infrastructure for ASD students, and limitations in adaptive learning strategies that meet the needs of ASD students.

Research attention on the ASD language in Indonesia’s inclusive classes is still limited to infants and preschool (Fatimah, 2021; Tarigan, 2019). Researchers in other regions of Indonesia are also still focusing on implementing interventions based on existing learning strategies (Njudang et al., 2020; Sulistyowati et al., 2022). Meanwhile, ASD is understood as a disorder of behavior, language, and communication (Bak et al., 2021; Favot et al., 2022; Mouga et al., 2020). However, the condition of communication and socialization barriers, especially for Indonesian ASD students, has still not received great attention.

The language competence of ASD students was obtained from several studies that previously observed their language development. The first findings were on phonological disorders (Aalto et al., 2022; Fatimah, 2021; Joseph et al., 2019). The second result is a disorder of morphological competence (Abner et al., 2022; Clarke, 2019; Naigles, 2021; Sulistyowati et al., 2022). The third result indicated a disorder of syntactic competence (Tarigan, 2019; Warren et al., 2021). Pragmatic and semantic disorders were observed from the use of words and sentences.

The contribution of this study is based on the limitations of previous studies in Indonesia. These can be seen from studies that mostly discuss the language of preschool students (Fatimah, 2021; Prasetyoningsih, 2016; Tarigan, 2019). Research on language barriers in ASD in Indonesia is still rare. Research on language learning students with ASD is also rare. Thus, the findings on the language profiles of ASD students are expected to contribute to broader research on language learning. This study is also expected to help describe language disorders.

This study aimed to examine four key aspects of language competence in students with ASD: pragmatic, phonological, morphological, and syntactic abilities. By investigating these areas, the research seeks to identify specific challenges faced by these students and to inform the development of targeted and adaptive interventions for children with ASD.

In autistic individuals, a disorder of consonant articulation has been observed. Fatimah (2021) found that autistic children will have difficulty articulating /f/, /s/, /v/, /r/, /l/, and /b/. Autistics have difficulty pronouncing all consonants and are only able to articulate /w/ and /y/. There were also autistic who distortions in /p/, /b/, /t/, /k/, /g/, /s/, /h/, /c/, /j/, /r/, /l/, /m/, /ŋ/ and /n/. Another research from Fatmasari (2011) that autistic can produce /p/, /b/, /t/, /d/, /k/, /g/, /f/, /s/, /z/, /a/, /h/, /c/, /j/, /m/, /n/, /l/, /r/, /w/, /y/, /i/, /u/, /e/, /o/, diphthongs /ai/, /au/, /oi/, and clusters /tr/, /pr/.

In terms of syntax, autistic individuals tend to use sentences with minimal structure and missing parts. The sentences are also declarative (Boucher & Anns, 2018). A more complex competency is semantics, which relates to the meaning system; important key variables of the study need to be covered using as many subheadings as required to elaborate on the issue under investigation. explained in her research that autistic individuals have semantic competence, and the form of speech can be imperative.

# Method

This study adopted a qualitative approach. This study used a case study of students with ASD. The case study was chosen to determine the truth of the facts from a group of respondents observed (Sukmadinata, 2016).

## Participants

The participants were nine students. These have verbal barriers through some tests, such as reading and speaking. Age range 12-16 years (M=7, F=2). The selected were recruited from three inclusive schools. Respondents are also selected based on the suggestions of the inclusive teachers.

## Instruments

The data instruments used were observations, tests, and field notes. The observation instrument was validated by an expert.

## Procedures

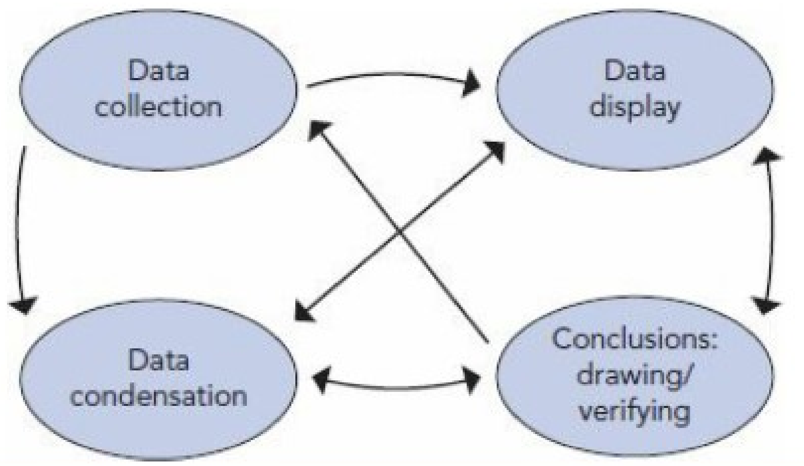
Observations were conducted from January to June 2024 at three junior high schools. The researcher observes the language profile through the learning process of reading, writing, listening, and speaking, using the provided text.

First, there are the special learning experts for ASD. The second is a child linguist lecturer. During the data collection, respondents were accompanied by inclusion teachers and were known to all parents and the school. The companions, parents, and teachers signed an informed consent form. Following the ethical clearance, an institutional review board (IRB) was obtained by the Ethical Committee of Human Research of the State University of Malang.

The data collected in the table includes phonological, morphological, syntactic, and pragmatic data. Furthermore, all the data were observed and interpreted to reach a conclusion about the development of language competence for each respondent. The language data were then encoded and classified into language profiles.

The data analysis used in this study involved reduction, presentation, and conclusion drawing (Miles et al., 2014). The three steps were carried out by capturing data through observation and recording data.

Figure 1
*Miles and Huberman Chart*




The data classification is divided into phonological, morphological, syntactic, oral, and written pragmatics.

**Ethics**

The Indonesian Ethics Commission granted ethical feasibility in 2024. The researcher has also obtained approval from the school and parents through informed consent. The school and teachers were provided with an explanation of the study's purpose and procedures.

# Results

**Description of Pragmatic Competencies**

Through the observation of reading texts, students are asked to answer questions and respond to conversations. The results are presented in Table 1.

Table 1
*Students Pragmatics*

| Code | Description |
|---|---|
| A | The response is slightly slow, the understanding of oral information is good, and for written information requires help. |
| B | The response is slightly slow, understanding of oral and written information is slightly hampered, but can be referenced with help. |
| C | The response is slow, understanding of oral and written information is slightly hampered, and it is difficult to refer to. |
| D | The response is slow, understanding of oral and written information is hampered, unfocused, echolalia, which speech is quite clear, and difficult to reference. |
| E | The response is slow, understanding of oral and written information is slightly hampered, unfocused, echolalia, speech is unclear, and it is difficult to refer. |
| F | The response is slightly slow, and the understanding of oral information is slightly hampered, the understanding of written information needs help, can be referenced with help. |
| G | The response is a little slow, the understanding of oral information is slightly hampered, the understanding of written information needs help, can be referenced with help. |
| H | The response is a little slow, the understanding of oral information is slightly hampered, the understanding of written information needs help, can be referenced with help. |
| I | The response is a little slow, the understanding of oral information is slightly hampered, the understanding of written information needs help, can be referenced with help. |

Six students showed good communication, and three are constrained. Six students understood the meaning of the questions in the texts. Students were able to answer the questions and provide appropriate answers. Four students had problems understanding the meaning of the question. Further observations were made through interviews with the groups that experienced constraints. Four students were specifically observed to determine their level of understanding.

**Description of Phonology Competencies**

Phonological competence refers to the ability to pronounce, such as pronouncing vowels, consonants, diphthongs, and clusters. The results are presented in Table 2.

Table 2
*Student's Phonology*

| Code | Oral Competencies | Writing Competencies |
|---|---|---|
| A | Pronounce all sounds smoothly and clearly | Sound deletion in the word *fung(s)I* and the addition of a sound in the word dite*n*kan |
| B | Difficulty pronuncing of /p/ from /f/ | Difficulty distinguish the writing of /p/ and /f/ |
| C | Pronounce all sounds smoothly and clearly | Write letters smoothly and in order |
| D | Difficulty pronouncing clusters /st/, /pr, /br/ | Error in using /p/ and /k/ |
| E | Pronounce all sounds smoothly and clearly | Write letters smoothly and in order |
| F | Pronounce all sounds smoothly and clearly | Often write with missing ending for some words like: *predika (t), guri (h), leza (t), si(o)may* |
| G | Difficulty pronouncing some clusters: /st/, /pr, /br/ | Write letters smoothly and in order |
| H | Pronounce all sounds smoothly and clearly | Write letters smoothly and in order |
| I | Pronounce all sounds smoothly and clearly | Write letters smoothly and in order |

Three students had difficulty pronouncing certain sounds. Similar sounds are difficult to pronounce and reverse in use. For example, students have difficulty pronouncing the word *faktor* (factor in English) and instead pronounce the word it as *paktor*. Students have difficulty pronouncing the letter /f/ in this illustration. In other cases, they had difficulty pronouncing the cluster sounds. Students find it difficult to pronounce the word 'proces' (process in English) and instead say '*peroses*'.

**Description of the Morphology Competencies**

The third object is the morphological. The observed aspect is the competence in the use of affixes. The results arepresented in Table 3.

Table 3
*Students' Morphology*

| Code | Oral Competencies | Writing Competencies |
|---|---|---|
| A | Able to pronounce without affixes (read, run, sleep) | Writing word with prefix errors: *me(ng)hibungi* |
| B | Able to pronounce without affixes | Able to write words |
| C | Able to pronounce without affixes | Able to write simple word |
| D | Able to pronounce without affixes | Difficulties in using the Indonesian prefix ber- and me- |
| E | Able to pronounce without affixes | Difficulties in using the Indonesian prefix ber- and me- |
| F | Able to pronounce without affixes | Difficulties in using the Indonesia prefix ber- and me- |
| G | Able to pronounce without affixes | Difficulties in using the Indonesia prefix ber- and me- |
| H | Able to pronounce without affixes | Able to write all words |
| I | Able to pronounce without affixes | Able to write all words |

**Description of Syntactic Competencies**

The fourth object is syntax. The results are summarized in Table 4.

Table 4
*Students' Syntax*

| Code | Oral Competencies | Writing Competencies |
|---|---|---|
| A | Able to pronounce simple sentences and contextual, difficulty using verbs and nouns at the same time | Able to write single sentences and contextual |
| B | Able to pronounce simple sentences and contextual, difficulty using verbs and nouns at the same time | Able to write single sentences and contextual |

| Code | Oral Competencies | Writing Competencies |
|---|---|---|
| C | Able to pronounce simple sentences and contextual, difficulty using verbs and nouns at the same time | Able to write single sentences and contextual |
| D | Difficulty proposing whole sentences | Difficulty writing whole sentences, word echolalia dominates sentences, and sentences are not contextual |
| E | Able to pronounce simple sentences and contextual, difficulty using verbs and nouns at the same time | Write simple sentences and contextual |
| F | Able to pronounce simple sentences and contextual, difficulty using verbs and nouns at the same time | Write simple sentences and contextual |
| G | Able to pronounce simple sentences, sentences are sometimes not contextual, difficulty using verbs and nouns at the same time | Write simple sentences and contextual |
| H | Able to pronounce simple sentences and contextual, difficulty using verbs and nouns at the same time | Write simple sentences and contextual |
| I | Able to pronounce simple sentences and contextual | Write simple sentences and contextual |

Seven students were required to use verbs and nouns in a single sentence. The student used only one of them in one sentence. This finding is evident in the three sentences above, which lack objects derived from nouns. The students also exhibited echolalia. Two students had difficulty writing and speaking in context. The sentences produced were often out of context. Only one student had sentence problems.

## Discussion

Fernandes et al. (2014) found that children with ASD in Brazil varied in their receptive and expressive language. Receptive competence was observed. Expressive competence is observed through oral and written phonological, morphological, and syntactic skills (Mohammadzaheri et al., 2022).

Two samples of students who understood the meaning of the information. Both students were understood to have repetitive behaviors that are commonly encountered in ASD (Maksimović et al., 2023). When echolalia occurs, the action is to repeat the question several times until both students understand and respond to the speech.

The profile of ASD students above, when compared to the pragmatic profile of students without ASD, has a gap. Adolescents without ASD have a level of language competence that allows them to understand the context and communication functions (Krashen, 1981). This is contrary to the language competence of ASD students, who have observed that the pragmatic profile of students, especially in complex text comprehension, still presents obstacles and also dominates the ASD language profile (Reindal et al., 2023).

In phonology, six students were able to pronounce language sounds smoothly and clearly. One student experienced difficulty in producing /p/ and /f/. This student also had difficulty writing /f/ and /p/. Furthermore, two students who experienced difficulties with/st/, /pr/, and /br/. Seven students had no obstacles in writing the letters in the words used. The uniqueness of the sound was observed only in the writing of two students who tended to eliminate letters in a word.

At more than 5 years of age, they should be able to pronounce /p/ and /s/ correctly (Al-Rasyid & Siagian, 2023) In addition, children without ASD should have mastered /a/, /i/, /u/, /e/, /o/ perfectly because the five vocal are mastered by the child 5 (Sari & Pratiwi, 2020). The phonological competence of children without ASD above is different from that of students with ASD. The phonological profile shows the existence of obstacles, especially in consonants.

All of the observed students demonstrated the ability to pronounce words, but only in the form of basic words without suffixes. All students who answered with a single word also had difficulty using suffixes that indicate a word's function. Students also tended to use nouns rather than verbs when communicating. This is also observed among English-speaking ASD children, who show more nouns than verbs (Lin et al., 2022).

The students can answer questions in writing by imitating. The method of providing keywords from reading topics can help teachers to learn languages (Mohammadzaheri et al., 2022). The students were also tutored repeatedly because the characteristic of ASD is easy memory loss (Xu & Ju, 2023).

The syntax profile of the write shows better results. Eight students were able to write sentences in the pattern Subject + Predicate + Object/Description. The sentences written also show the contextuality between words. Students were asked to write the function of the mobile phone, and they wrote the two words, namely *the mobile phone* and *the phone,* four times.

## Conclusion

The language profiles of ASD students show some disorders in pragmatics, phonology, morphology, and syntax. This finding is similar to the Indonesian ASD student's language barrier, which was eventually addressed through DTT (Shalsabilla, 2023). So, language learning reform in Indonesia is needed for ASD students, including updating language learning methods and media (Prameswari et al., 2024).

The findings on the language profiles of Indonesian ASD students are expected to serve as a reference for further research, especially in applied linguistics. Information about the nature of ASD students' language deficits will serve as the foundation for determining appropriate language interventions. The findings can be used by language researchers, educators, and individuals involved in the language processing of ASD students.

During the observation, the ASD students studied were still limited in number. This study observed only 9 students across 3 schools in Indonesia. The results of these observations are less robust if generalized to all existing students' conditions.

Despite the insights from the findings, this study was limited by a small sample size, comprising only nine students from three schools. This constraint diminishes the generalizability of the findings to the broader population of ASD students in Indonesia, which is characterized by significant linguistic, cultural, and educational diversity. Additionally, the study focused on observable linguistic deficits, but did not employ a longitudinal design. Another limitation is the absence of integration with psychological assessments, which could have offered a better understanding of students' language difficulties.

To address this, future research should aim to expand the participant pool across various regions and educational contexts in Indonesia to capture greater diversity. Longitudinal studies are necessary to track the language development trajectories of students with ASD, thereby providing deeper insights into the timing and nature of improvements. Furthermore, future research could investigate the development and evaluation of innovative technology-mediated language interventions, such as digital platforms, tailored to learners' unique language challenges.

## Acknowledgements

The authors would like to express sincere gratitude to the Indonesian Education Scholarship, Center for Higher Education Funding and Assesment, and Indonesian Endowment Fund for Education for their support. This article was made possible in part by the facilitation and resources provided by these institutions.

## Disclosure Statement

The authors reported no potential conflicts of interest.

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